**WE CLAIM:**

1. A hematocrit sensor comprising:

a blood circuit;

a sensor that measures hematocrit values and is connected to said blood circuit;

a blood purifier connected in the middle of said blood circuit that purifies blood while extracorporeally circulating said blood;

a housing connected to a portion of said blood circuit;

a slot built in said housing

a slit or plurality of pores built in said slot of said housing; and

a light emission means and a light reception means built in said housing such that both said means face said blood circuit through said slit or plurality of pores.

2. The hematocrit sensor of claim 1, further comprising a cover fixed to said housing that covers said slot when said cover is closed.

3. The hematocrit sensor of claim 1, further comprising a cover fixed to said housing that swings open against the housing and uncovers said slot when said cover is opened.

4. The hematocrit sensor of claim 2, further comprising a holding means that holds the cover in place when the slot is covered.

5. The hematocrit sensor of claim 2, further comprising a detection means that detects whether or not said blood circuit is in said slot, and whether or not said cover is closed.

6. The hematocrit sensor of claim 1, wherein said blood purifier performs dialysis treatment.

7. The hematocrit sensor of claim 6, further comprising an ultrafiltration pump, substitution fluid, and dialyzing fluid.

8. The hematocrit sensor of claim 1, further comprising a drip chamber connected to said blood circuit.

9. The hematocrit sensor of claim 8, wherein a fixing means is integrally formed with said drip chamber and said housing.

10. The hematocrit sensor of claim 1, further comprising an air bubble detector connected to said blood circuit and built in said housing.

11. The hematocrit sensor of claim 1, further comprising a blood detector connected to said blood circuit, wherein said blood detector detects the presence of blood in said blood circuit.

12. The hematocrit sensor of claim 1, wherein said slit has an adjustable width.

13. The hematocrit sensor of claim 1, wherein said plurality of pores has an adjustable diameter.

14. A method of measuring hematocrit values using the hematocrit sensor of claim 1, comprising:

emitting light from said light emission means toward the blood flowing through said blood circuit;

receiving light reflected from the blood flowing through said blood circuit into said light reception means

determining the light absorption received by said light reception means; and

continuously calculating measured hematocrit values based on the strength of the received light.

15. The method of claim 14, wherein said measured hematocrit values are compensated based on the strength of the light received by the light reception means when the light is turned off while said light emission means is flashing.

16. The method of claim 14, wherein said measured hematocrit values are compensated based on the flow rate of the blood flowing through the blood circuit.

17. The method of claim 15, wherein said measured hematocrit values are compensated based on the flow rate of the blood flowing through the blood circuit.

18. The method of claim 14, wherein the first of said measured hematocrit values is calculated at the time at which the blood detector first detects blood flow through said blood circuit.